

AMENDMENT UNDER 37 CFR § 1.111  
Serial No. 09/577,814

### REMARKS

A total of 41 claims remain in the present application. Referring now to the text of the Office Action:

- claims 1-4, 19-21, 28, 31, 33 and 38-41 stand rejected under 35 U.S.C. § 103(a), as being unpatentable over the teaching of United States Patent No. 6,266,345 (Huang) in view of United States Patent No. 5,461,622 (Bleickardt);
- claims 13, 34 and 37 stand rejected under 35 U.S.C. § 103(a), as being unpatentable over the teaching of United States Patent No. 6,266,345 (Huang) in view of United States Patent No. 5,461,622 (Bleickardt) as applied to claims 1 and 33, and further in view of United States Patent No. 5,537,405 (Yoshifuji);
- claims 14 -18 stand rejected under 35 U.S.C. § 103(a), as being unpatentable over the teaching of United States Patent No. 6,266,345 (Huang) in view of United States Patent No. 5,461,622 (Bleickardt), and further in view of United States Patent No. 5,537,405 (Yoshifuji), as applied to claim 13, and further in view of United States Patent No. 5,537,405 (Parruck et al);
- claims 35 and 36 stand rejected under 35 U.S.C. § 103(a), as being unpatentable over the teaching of United States Patent No. 6,266,345 (Huang) in view of United States Patent No. 5,461,622 (Bleickardt), as applied to claim 33, and further in view of United States Patent No. 5,537,405 (Parruck et al); and
- claims 5-12, 22-24 and 32 are objected to as being dependent on a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

As an initial matter, applicant appreciates the Examiner's indication of allowable subject matter in claims 5-12, 22-24 and 32. The Examiner's rejections under 35 U.S.C. §103(a) is believed to be traversed in view of the following discussion.

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Referring to claims 1, 19 and 31, the Examiner asserts that: "Huang discloses a method of and nodes for transporting an input signal through hyper-concatenated connection between a start node and an end node in a network ..., the input signal having a variable user selected concatenation ... where 'concatenation' is, as broadly defined, 'to link together in series' such that a variable rate data stream is concatenated since the sub-streams multiplexed to form the variable rate stream are linked in series; the method comprising steps of and the nodes comprising means for: a) receiving the input signal at the start node and splitting the input signal into a plurality of derived signals independently of the concatenation of the input data signal ...; b) transmitting the derived signals as hyper-concatenated data streams (optical stream over which input stream is transmitted) within respective ones of a plurality of channels...; and c) recombining the derived signals at the end node to form an output signal equivalent to the input signal....". With respect, such a characterization of the Huang reference is utterly unsupported by the teaching Huang.

United States Patent No. 6,266,345 (Huang) teaches a method of dynamically allocating bandwidth of a transport network (e.g. SONET/SDH, FDDI etc. – See col 2, lines 42-45) to data streams having varying bit rates. In accordance with Huang, the bit rate of an inbound data stream is detected and used to allocate ... "a number of virtual channels in which to package the data." As noted by Huang at col. 2, lines 62-65, "Virtual channels are typically referred to as virtual tributaries in the SONET transport standard and as virtual containers in the SDH transport standard." Thus the person of ordinary skill in the art will immediately recognise that Huang teaches methods for mapping an input data signal to a frame (e.g. a SONET synchronous payload envelope) of the transport network. Thus, the skilled artisan will recognise that Huang does not teach or suggest the elements of the present invention. In particular:

Huang does not teach or suggest "transporting an input signal through hyper-concatenated connection between a start node and an end node in a network". Huang teaches that an input data signal is mapped to a synchronous transport frame of a transport network. As is well known in the art, a synchronous transport frame is conveyed through the network with a single channel. Huang does not teach, suggest, or even remotely contemplate distributing the

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frame across two or more channels, and thus does not contemplate anything remotely similar to a hyper-concatenated connection.

Huang does not teach or suggest "splitting the input data signal into a plurality of derived signals independently of the concatenation of the input data signal". Huang teaches that an input data signal can be segmented and mapped into two or more virtual channels. The skilled artisan will recognise, however, that the result of segmentation is a set of signal fragments, which cannot reasonably be referred to as "derived signals", at least because the fragments can no longer be transmitted through either the source network (from which the input data signal was received), nor can they be transmitted through the transport network without first being mapped to a synchronous transport frame.

Huang does not teach or suggest "transmitting the derived signals as hyper-concatenated data streams within respective ones of a plurality of channels". Huang teaches that each signal segment is mapped to respective virtual channel of a synchronous transport frame. As mentioned above, there is no similarity between a synchronous transport frame and a hyper-concatenated connection. As such, the payload of each virtual channel cannot reasonably be referred to as hyper-concatenated data streams. Additionally, the person of ordinary skill in the art will recognise that there is absolutely no similarity between a virtual channel of a synchronous transport frame and a channel of the network. Furthermore, the virtual channels of a synchronous transport frame cannot be referred to as "independent" in any meaningful sense, because they are all contained within the synchronous transport frame, and transported through the synchronous transport network as a single unit.

Finally, as admitted by the Examiner, Huang also does not teach or suggest that "at least one of the hyper-concatenated data streams [is] routed through a pointer processor state machine that is independent of a pointer processing state machine through which another one of the hyper-concatenated data streams is routed". However, the Examiner asserts that this feature is found in United States Patent No. 5,461,622 (Bleickardt et al), and argues that it would be obvious to modify the teaching of Huang to include independent pointer processing as per Bleickardt et al.

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Even if the Examiner's characterization of Bleickardt is valid, which is not admitted by Applicant, it is submitted that the Examiner's combination of Huang and Bleickardt fails to establish a prima facie case of obviousness. In particular, in order to make a prima facie case of obviousness, the Examiner is required to show (i) some suggestion or motivation to combine the references, (ii) a reasonable expectation of success, and (iii) that the prior art references teach or suggest all the claim limitations.

Bleickardt et al. teach a method and apparatus for using SONET overhead to align multiple synchronous transport frames received through respective parallel channels. Thus, the A1 and A2 framing bytes, and the H1 and H2 pointer bytes are extracted and used to determine from where in plural buffers stored frames of each received signal should be read out so that the read out signals are properly aligned (Abstract). However, there is nothing in this teaching that implies that the signals are processed through independent pointer processor state machines. In any event, the person of ordinary skill in the art will instantly recognise that Huang and Bleickardt et al are directed to entirely different problems, and teach entirely unrelated solutions. Thus there is no motivation in Huang or Bleickardt et al to combine the two teachings in the manner suggested by the Examiner.

Furthermore, the skilled artisan will recognise that there is no basis to expect that the Examiner's combination would work. In particular, the Examiner's combination requires that the synchronous transport frame of Huang be inverse multiplexed in such a way that each virtual channel of the frame is conveyed through a separate channel of the network. There is no obvious method by which this might be successfully implemented, even if sufficient channels were available in the network, and neither Huang nor Bleickardt et al. provide any teaching or suggestion as to how to overcome that problem.

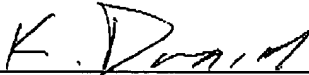
Finally, Bleickardt et al. fail to provide the missing elements from Huang, as described above. None of the other references cited by the Examiner provide the missing teaching. Thus it is submitted that the Examiner has failed to make a prima facie case of obviousness of any claims, based on the Examiner's combination of references.

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In light of the foregoing, it is respectfully submitted that the presently claimed invention is clearly distinguishable over the teaching of the cited references, taken alone or in any combination. Thus it is believed that the present application is in condition for allowance, and early action in that respect is courteously solicited.

If any extension of time under 37 C.F.R. § 1.136 is required to obtain entry of this response, such extension is hereby respectfully requested. If there are any fees due under 37 C.F.R. §§ 1.16 or 1.17 which are not enclosed herewith, including any fees required for an extension of time under 37 C.F.R. § 1.136, please charge such fees to our Deposit Account No. 19-5113.

Respectfully submitted,

  
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